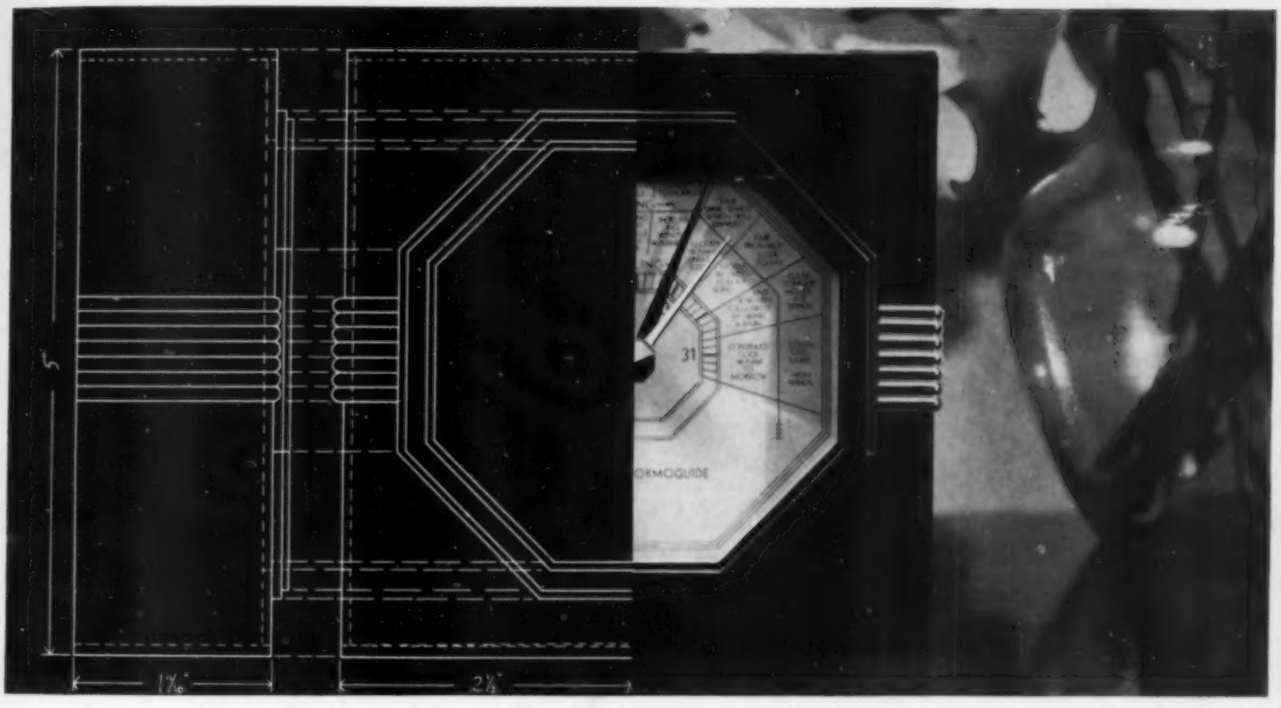
PLASTICS & MOLDED PRODUCTS

Volume 8 SEPTEMBER 1932 Number 9



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Communications should be addressed to their Secretary at 420 Lexington Avenue, New York City.

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Reg. U. S. Pat. Off.

Volume 8 **September 1932** **Number 9**

Contents

FROM THE BRITISH POINT OF VIEW 343
An interview with Capt. J. W. Barber

ACHIEVEMENT OR OBLIVION? 345
By Carl Marx

PICTORIALLY SPEAKING 347

DREAMS AND REALITIES 348
By Dr. Leo H. Baekeland

UNIQUE FEATURES IN MALLORY IGNITION 349
By F. E. Brill

JAPANESE INDUSTRY COOPERATING 350

NEWS OF THE INDUSTRY 352

TECHNICAL ABSTRACT SECTION 354

AND NOW, IN CLOSING 370

"WE should all be very careful when we say 'no' to a suggested improvement or plan made by a subordinate. A 'no' in most cases is final. There is no appeal from it. On the other hand, if we say 'yes', the matter usually comes up for review by other superior officers, which gives such suggestion the advantage of having several officers review it.

"We are usually more careful when we say 'yes' because we know that our 'yes' decisions will have to stand the test of performance or further approval. As a matter of fact, we should be more careful with our 'noes' for the very reason that they do not have to stand the test of performance or further approval."

From a talk by Mr. A. W. Robertson, Chairman of the Board, Westinghouse Electric & Manufacturing Company.

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PLASTICS & MOLDED PRODUCTS

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Volume 8 SEPTEMBER, 1932 Number 9

From The British Point of View

Based on an interview, By R. C. Gilmore, Jr.,

With

Captain J. W. Barber, C. B. E.

Chairman, British Plastic Molding Trade Association; Radio Manufacturers' Association.
Managing Director, Brownie Wireless, Ltd.

IN common with many another interviewer, the writer felt some trepidation at the thought of actually interviewing an Englishman. The romance surrounding your average British subject is that he is, first of all, a somewhat ambiguous and befuddled landed gentleman; secondly, that his provincialism overshadows his restricted sense of humor; lastly, that his problems are mostly concerned with the correct court attire or the present market price of His Majesty's tea in The Possessions.

It was therefore a distinct surprise to find in Captain J. W. Barber the distinct antithisis to this description. The processes of his mind were more soundly and economically attuned than many an American's. His talk was full of such convincing phrases as "the lower cost ratio of piece-work" and the "true relation of costing to profit margins".

Captain Barber had just returned from the Ottawa Conference, where he represented the British Radio Manufacturers. He said that, even at this meeting, he was able to slip in a reference to molded parts, and we can well imagine that he did. It is a subject that is truly on his mind, small as it is in relation to his own business in radio. But let us give Captain Barber the floor—.

"You ask what makes our Association, our entire Industry, so visibly more co-operative than your own? Well, fundamentally, I think, it goes back to the difference between our standards and yours. In America people seem to measure a person or a product or a business in terms of its dimensions. It is 'so big' or 'so small'. In a way, of course, that attitude is an asset. It permits you to start in again after a failure, a task that is virtually impossible in this country. But it handicaps by giving you only one standard of value; a standard that is workable only in prosperous times".

"In our Association activities in England I transplanted only one of your pet American ideas —the business luncheon. It is the means of bringing together, in sociable intercourse, the most bitter competitors. The other ideas are universal in my country. We assess our members a flat fee. We collect no statistics on sales or volume, not because we distrust one another, but because that is regarded as private business."

"Do we have price cutting? We always have and probably always will. But the bulk of it has been overcome through a better understanding of methods. It is a wholesome tradition to make a profit on a job, and we try to uphold it".

Captain Barber laughed. "We had an interesting illustration of this in the early days of our Association work. One of our firms drew up a series of blue prints, and these were given to every member company to use in preparing a quotation on the pieces. At the same time, we were each handed a finished part, told what it weighed and how many were needed per day, and asked to estimate. The quotations on the blue-prints ranged from the sublime to the

ridiculous. But the estimates on the definite tangible article did not vary five percent!"

"In other words, given a uniform, definite basis for quoting, our different costing systems functioned as one. It was when we had to work out the basis for ourselves that we ran into trouble. A foreman that comes in to me saying, "We're in luck on this piece, sir. Estimated it at two ounces and it actually weighs only one and one-half", need look for no congratulations! Such an instance would be evidence of stupidity or carelessness and might have cost us the job,—at any rate our profit on it."

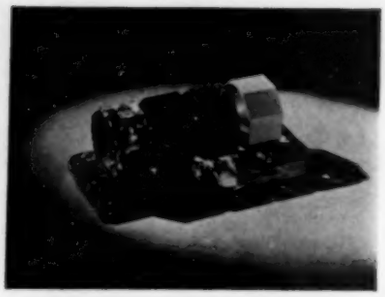
Need For Unity

"It seems to me", the Captain continued on a fresh tack, "that this plastics industry, in your country or my own, has the same problems that beset every industrial group. They also have the same common denominator that can help to solve those problems—the need to cooperate for the profit that is in it. Not just for good fellowship. The better the understanding between molders or between laminators, the broader the market for these products and for their ingredients. Consequently the raw material companies have much at stake in such an effort. No group wants to stabilize prices—laws or no laws—but they do want to increase profits. This can be done through associated effort, for that effort can detect and correct economic flaws and inaugerate progressive policies to deal with the purchasing agent problem".

Valuable Lessons

"Of course we have the small-plant pirate", Captain Barber replied to our query. "Most of them are not included in our Association unless we are convinced that they have abandoned their destructive policies. In this manner, that problem takes care of itself, since the 'pirate' must be a conformist if he wants any profitable business."

"I have great admiration for your country," Captain Barber



A recent importation from England is this gay, attractive "Serviette" stand, a holder for four vari-colored napkin rings which add a touch of "swank" to the dining table. Both stand and rings are molded of Bakelite material.

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stated. "Your ambition and progressiveness is remarkable. Mechanically, too, I feel you are further advanced than we are, —the Kurz-Kasch plant, in my opinion, is the finest in the world for custom molding. Your rise from this depression will probably be many times more rapid than ours, and will reach higher than ours. But I also believe that your slump has been greater. In other words, perhaps, in addition to teaching us something about molding you may be able to learn something from our progress in the past few trying years. We are well organized, we support publicity and educational activities, we keep our Association financially profitable, we are developing new markets with great rapidity and most of us are making a profit from our businesses."

"That sounds a good deal like Utopia", was the writer's reply.

"It hasn't been", was the Captain's instant answer. "Hundreds of us have been hit so hard in recent years that we are reluctant to sit down!! But many of us have learned, now, that we have vulnerable spots, and it will be extremely difficult to do the same damage a second time. As an example, we have learned a lesson regarding plastic materials from the Continent. It is far less expensive and much better business for us to buy at home."

"There is absolutely no sense", he continued, "in making any industry act as a development laboratory for all types of materials, products and equipment."

"Certainly I would welcome any of the members of your industry to my country", was Captain Barber's reply to my query. "Not because I want to try to teach them something, either! not because our banking system, tight as it is, is safer than your own; not because many of us are living better, making more in proportion; but because I feel, selfishly, that if any of you do come, I can learn something to my benefit. And that is what I have done on this visit".

So it's natural for us, also, to be selfish in the same fashion. Through PLASTICS, Captain Barber expresses a cordial welcome to any of our readers who want to see "what makes the wheels turn" in England. That they are turning profitably, makes it that much more interesting.

Questions

Why is it that the Britisher has such a different attitude than ours? Carl Marx, Editorial Director of this publication, commented upon this after a prolonged visit to England a short while ago. The casual observer notices it, first of all, in the athletic and social life of the people, and, while a portion of it is also evident in those same spheres in our country, the Englishman goes further. By transplanting it into the field of general business, he capitalizes it to his own advantage.

In business, this attitude has a wider field of usefulness. To know that you can entrust information to a competitor, even to the point of securing his cooperation on a job, needs complete understanding and an unexpressed feeling that reciprocity exists. Sooner or later, that competitor will want the same help.

Isn't it barely possible that an intelligent study of the British plastic industry will be profitable for our own?

Achievement or Oblivion?

These Patents May End Either Way, But They are of Technical Importance

By Carl Marx

THERE are many unusual applications of resinoid materials disclosed in foreign patents. As in the case of those disclosed in United States Patents (Plastics, August to December 1929) some of them are valuable contributions to the art while many are and will probably always remain curiosities.

One of the most unusual applications that has come to the writer's attention is the use of a phenol or urea resinoid as a protective coating for a "wireless panel" made of ebonite to keep it from darkening or discoloring due to the light. This application disclosed in British Patent 303,814 dated Sept. 6, 1927 is all the more remarkable when it is remembered that the resinoids particularly of the phenol and amino type are far from being fast to light themselves (Light Rays and Resinoids, Plastics, April 1929—Einwirkung von Lichtstrahlen auf Kunstlicke Harze, Kunstoffe, September 1929).

An analogous application is the use of a synthetic resin to protect the silvered surface of glass, disclosed in British Patent 262,824 dated December 14, 1925. The silvered surface of the glass is coated with the resinoid dissolved in a solvent having a boiling point less than 100° and the glass is heated to polymerize the coating.

Another very unusual application is disclosed in German Patent 428,951 dated May 24, 1924 wherein the patentee suggests storing a perfume in a jar made of a phenolplastic in order to improve and strengthen the aroma.

Still another out of the way application is that suggested in British Patent 17,576/1915 in which a composition said to be suitable for medical and cosmetic preparations is made by emulsifying polymerized cumaron and indene by melting with a saponifiable resin as colophony or fat or oil and saponifying the mixture with alkali, ammonia, or sodium silicate.

A transparent wrapping paper for candy is made by coating sulphite cellulose paper on both sides with a solution containing resinoid and glycerol. This is disclosed in British Patent 229,161 dated Apr. 8, 1924.

Chemical Vessels

The following patents disclose containers that may be employed in chemical processes:—

Austrian Patent 103,905, Jan. 3, 1925.

The vessel made of suitable material is sprayed with a metal, the metallic coating is roughened, a resinoid coating is supplied and finally hardened.

British Patent 23,573/1910.

A digester has an acid proof lining of asbestos impregnated with a phenol resinoid.

British Patent 122,661, Oct. 26, 1917.

The vessel is lined with tiles and the joints therebetween are filled with a phenol resin composition containing an asbestos filler. The lining is hardened by subjecting the vessel to heat.

British Patent 129,993, July 16, 1919.

A chemical vessel is made of a composition produced by condensing phenol, cresol or naphthol and paraform or trioxymethylene in the presence or absence of traces of alkali catalysts. The initial product is converted into the final product by the addition of liquid organic acids as lactic, acetic or formic or solid acids dissolved in liquid acids with or without heat. Traces of a mineral acid such as hydrochloric, hydroxy acids of sulphur or phosphorous, or boric acid, etc. may also be added. Fillers such as pumice, sand, glass, emery, asbestos, minerals, paper pulp, sawdust, cotton, glue, rubber, or naphthalene may also be added.

British Patent 156,675, Jan. 6, 1921.

This patent discloses a composition for chemical vessels made by condensing phenol, cresol or naphthol to the initial stage with anhydrous polymers of formaldehyde in presence or absence of alkaline catalysts and converting into the final stage with lactic, acetic, formic, ricinoleic, oxalic, tartaric, citric, gallic or tannic acid with the addition of a small amount of hydrochloric or a sulphur or phosphorous oxy acid. The same fillers as in British Patent 129,993 may be incorporated.

British Patent 276,697, Aug. 30, 1926.

Acid proof receptacles and pipes are formed with a reenforcing support of wide mesh fabric impregnated with a synthetic resin.

British Patent 283,868, Jan. 18, 1927.

A bottle to be used for hydrofluoric acid is made or covered with a phenolplastic composition preferably containing a finely divided graphite. The phenolplastic may afterwards be coated with a varnish.

French Patent 654,238, Jan. 12, 1927.

A container is protected against the action of gasoline, oil or alcohols by means of a coating containing cellulose ace-

tate and a solution of a phenolplastic.

German Patent 304,319, Aug. 20, 1916.

An autoclave or a vessel of metal or wood is coated on its inside with a solution of a phenol resinoid and hardened by heating at 160°.

German Patent 305,179, (Addition to German Patent 304,-319), Oct. 31, 1917.

The coating is applied to the vessel by means of a brush and the hardening is accomplished under pressure in order to avoid bubbles.

Swiss Patent 119,461.

This patent is directed to providing means for holding the acid proof phenolic resin composition tightly to the metal surface of the vessel. The interior surface of the container is first provided with depressions which are filled with the synthetic resin. Then the entire inside of the vessel is coated with the same material and heat is applied to harden the coating.

Chemical Coatings

The use of a resinoid in the chemical industries brings to mind the following patents disclosing chemical resisting compositions:—

British Patent 253,531, June 9, 1925.

Readily repairable acid proof coatings are formed of alternating layers of an artificial resinous plastic and a mixture of an artificial resin and asbestos, kieselguhr or graphite. The second composition is said to be porous.

British Patent 274,333, Nov. 15, 1926.

A chemical resisting coating is made of an artificial resin or the necessary reagents with or without solvents as alcohol or acetone and water glass with or without silicic compounds, and clay or metal oxides.

British Patent 274,355.

The coating of British Patent 274,333 is hardened by heating in the absence of air as in a bath of high boiling point oil.

British Patent 297,418, Sept. 21, 1927.

Cans, such as those formed of sheet iron, or the sheets from which the cans are to be made, are coated with lacquers containing resinoids. Among the resinoids mentioned are the glyptals made by heating together glycerol, phthalic anhydride and acids obtained by the hydrolysis of linseed oil in carbon dioxide.

British Patent 300,357, Sept. 27, 1927.

Rubber tubing for conveying coal gas is provided with an external reenforcing fabric and is then "doped" with a phenol resinoid.

Construction Materials

The first foreign patent disclosing a composition suitable for construction is British Patent 9023/1911. This patent describes a method of making a composition that is said to be adapted for roofing, paving and artificial lumber. Fatty oils and fats or derivatives as linseed, tung, sunflower, corn or menhaden oils or oleic acid, olein, stearic acid or stearin are combined with chlorinated hydrocarbons or derivatives as chlorinated ethylene, benzene, naphthalene, anthracene, crude petroleum or its distillates, ozocerite, asphalt, coal tar or retort residues. Fillers as silica, zinc silicate, obsidian, clay, mineral, resins, calcium silicate, lead sulphite and cellulose may be incorporated.

Three other British patents disclose paving compositions. In British Patent 256,513 cumaron resin, tar, pitch or oils are mixed with spent materials from iron oxides purifiers of gas works and the mixture heated. Lime and basic compounds may be added.

In British Patent 312,372 dated November 18, 1927 a road making material is made as follows:—Tar is hardened by dispersing in it substantial quantities of hard pitch, bitumen or natural resin by use of a synthetic resin such as a phenol aldehyde or cumaron resinoid as dispersing agent. The synthetic resin may be added as such or formed within the mass. Rubber solutions, oils (oxidized or vulcanized), etc. may also be added.

In British Patent 298,968 dated October 18, 1927 phenols or phenolic compounds as crude brown coal tar creosote and finely divided cellulosic material as air dried sawdust are caused to react at 110-120° C. in the presence of a catalyst as sulphuric or hydrochloric acid. The properties of the composition may be varied by the addition of a previously formed condensation product, tar oil, etc. or by subsequent heating. The product may also be used as a roofing material.

Roofing compositions are also disclosed in the following patents:—

British Patent 9559/1911
British Patent 306,242 and
French Patent 659,942.

In the first of these patents a fusible phenolplastic is treated with formaldehyde, hexamethylenetetramine or a compound of chlorophenol and ammonia to serve as a hardening agent. A substituted phenol or naphthol with or without naphthalene may also be added to serve as a plasticity agent.

In British Patent 306,242 (French Patent 659,942) a transparent material suitable for a plant shelter is made coating a net work of organic material as wool, yarn or webbing with a transparent or translucent artificial resin as for example a urea-formaldehyde condensation product.

Suitable compositions for building materials are also disclosed in the following patents: British Patent 15,271/1914.

An artificial stone is made by polymerizing vinyl acetate or chloracetate by means of heat, light, catalysts as peroxides, ozonides, anhydrides, perborates, percarbonates, or metal oxide and mixing therewith castor oil, camphor, dyes, coloring matter, organic acids, alcohols, cellulose esters, zinc oxides, solvents, etc.

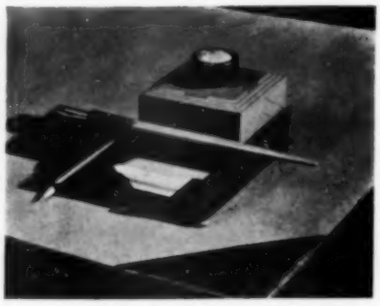
British Patent 182,886, April 6, 1921.

Phenol is heated with formal-

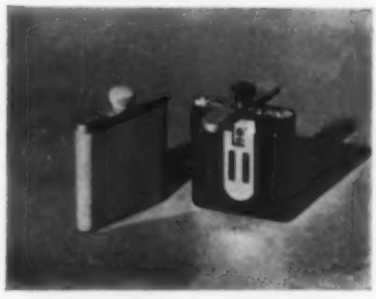
(*Continued on page 361*)

THE NEWEST SALES SUCCESSES

Two splendid new closure items that open up new fields to the medicinal and perfumery trades. Both Bakelite applications, the Joubert Blue Waltz perfume uses a blue molded material for the base of the atomizer, making it harmonize with the blue, gold and black label. The bottles developed by the Pennsylvania Glass Products Company use a molded closure incorporating either a dropper or applicator. They come in a wide variety of colors and are suitable for a wide variety of liquid products. The first of these developments was molded by Colt's Patent Firearms; the second by the Kurz-Kasch Company.

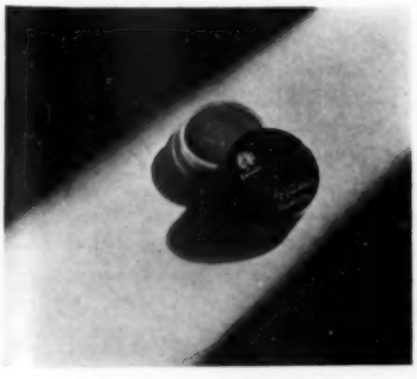


Thomas A. Ryan, who has brought out many striking ideas in the past year, is responsible for the combination ink stand, memo pad and blotter, in Bakelite molded, that is on the left. Pictured opposite is bathers kit for carrying cigarettes and matches. Molded by Imperial Molded Products, it is both waterproof and attractive, being composed of Bakelite with either gold or chromium trimmings.



Vantine's rouge, pictured below, takes the product prize of the month. No larger than a half-dollar, the design and name are molded in the cover and ten words are engraved on the bottom! It has a lustrous black Durez top and scarlet base. Molded by Norton Laboratories, its widest sale is through the chain stores.

Bakelite Laminated received another endorsement when it was picked by the Moore-McCormick-Scantic Line for use in the DeLuxe stateroom of the new S. S. Scan-States. The walls, baseboard, and door trim are all panelled with the wood-grained material, and are virtually impossible to injure.



Coming in ten different colors, the Pyralin topped hamper illustrated above has a mother-of-pearl finish that is a delight to any housewife. It is manufactured by Gleitsmans, Inc., Glendale, New York, who also furnish a matching bathroom stool to add to the attractiveness of the line.

Dreams and Realities

By Dr. Leo H. Baekeland

THIS article is an abstract of one that appeared in the Journal of Chemical Education for June, 1932. It is part of a lecture delivered by Dr. Baekeland under the A. R. L. Dohme Foundation at Johns Hopkins University, October 23, 1931. What is here reprinted, with the special permission of the author and its original publishers, constitutes a glimpse into the thoughts and actions of Dr. Baekeland during the formation of his commercial enterprises.

To serve as an introduction to our readers, let us reprint two sentences given earlier in the lecture, to which Dr. Baekeland refers in this first paragraph on this page:

"But the safe and true optimist should be prepared for the worst as well as the best. Our present business crisis is the result of a long stretch of flimsy optimism, which led into a fool's paradise".

MY great luck—which seemed a misfortune at that time—was that I got this valuable lesson early in my industrial career. I had just built a little factory in Yonkers for the manufacture of Velox photographic paper, one of my earlier inventions. I was about ready to produce this paper on a commercial scale, when the intense panic of 1893 broke out and upset all business plans and financial conditions in the United States. It lasted several years, and was followed by another crisis, about as bad, in 1896. So I got then and there my early "baptism of fire." The present younger generation can hardly imagine how much less serious conditions are at present than in 1893, when even the financial credit of the United States Government was at stake.

Secure at Thirty-five

Moreover, I had been too optimistic in believing that the photographers were ready to abandon the old slow processes of making photographic prints. I had to find out then how difficult it is to teach anything new to people after once they get used to older methods with which they have become familiar. Even my best friends tried to dissuade me from the continuation of my stubborn efforts. I had also unforeseen manufacturing difficulties, but I gradually managed to overcome them. So, after all, my most arduous and expensive task was the introduction of the process to skeptical customers, always ready to attribute their failures to the paper instead of to their lack of care.

So passed several years of hard work, with never a single day of rest, and ever wondering whether I would pull through or not. Finally success came, and I could begin to pay my debts. But by that time I was pretty well fed up on business matters, and more than ever desirous to return to my former broader fields in chemical research. So after Velox paper had become a well-paying enterprise, I sold out my interests to the Eastman Kodak Company.

Thus at thirty-five I found myself in comfortable financial circumstances, a free man, ready to devote myself to my favorite studies. Then truly began the very happiest period of my life. I improvised one of the buildings at my residence in Yonkers into a modest but conveniently equipped laboratory. Henceforth I was to be able to work at various problems of my own free choice. In this way I enjoyed for several years that great blessing, the luxury of not being interrupted in one's favorite work.

Bakelite Invented

Everything went well until, amongst numerous other subjects, I became interested in a line of research which captivated me, until it led eventually to Bakelite. I described my work on this, early in 1909, before the New York Section of the American Chemical Society. But from that day on, my life of peace was gone again. I was plagued daily by telephone calls, letters, visitors, and business men. I firmly intended to escape the recurrence of business occupations, as in my Velox days. So I planned, instead of manufacturing myself, to grant licenses to establish manufacturing concerns, specially experienced in plastics. But I soon was confronted with a repetition of my former experience with Velox: that it was very difficult to teach new methods to men who had acquired routine in older processes. The preparation of the new resinoid and its molding compositions, which to me seemed very simple, appeared either very difficult or needlessly com-

(*Continued on page 359*)

Unique Features in Mallory Ignition

By F. E. Brill

VACUUM - TIMED ignition that regulates the spark-timing in accordance with the engine load as well as the speed, and an entirely new type of coil-design, are unusual features of an ignition system recently perfected by the Mallory Electric Corp. and now used extensively throughout the automotive industry. A system working on the same principle to the one illustrated above is used on the New Ford V-8.

The Mallory vacuum-timed distributor is more than a refinement of the centrifugal governor principle. Although it uses the conventional speed-governor, there is also a compression-regulated governor-brake, using the vacuum from the intake manifold, which automatically adjusts the spark to load as well as speed condition. For example, when the throttle is kicked wide open from medium speed, the Mallory system retards the spark to avoid the spark-knocking which ordinarily accompanies the increased compression. At high speeds and when idling, the governor brake has no effect on the timing, because the brake disengages automatically as soon as the vacuum in the intake builds up above ten inches. The full force of the brake is never applied unless the vacuum collapses to almost zero, which happens only when the throttle is wide open or when the engine is operating under heavy load at low speed.

Coil Construction

Fully as interesting from an engineering standpoint is the new ignition coil developed by this same manufacturer. Although it consumes no more current than previous types of coils, it is said to deliver a faster and more powerful spark. Two secondary coils of 15,000 turns each are connected in series—almost twice the ordinary number. Another radical innovation which promises revolutions in methods and materials used in coil construction is the molded plastic case. The entire coil is housed and hermetically sealed with rubber gaskets in the black case illustrated, molded by Reynolds Spring Co. of black Durez—a phenol-formaldehyde molding compound. The cover carrying the three terminals is molded of a special type of phenolic compound of high dielectric and arc-resisting qualities, made from a new formula to prevent arcing and short-circuiting even when subjected to moisture.

The use of the molded plastic case instead of metal completely eliminates choking and shorting and prevents moisture from getting into the windings. The coil is said to start any engine with only two volts of battery current, delivering hot sparks throughout the entire throttle-range. It is also claimed that it meets the requirements of an eight-cylinder engine turning up to 5,000 R. P. M.

Japanese Industry Cooperating

New association formed to cement internal and external relations

By T. Yanagi

THERE are many kinds of old and new plastics industries in Japan, and they can be divided into two main groups by their qualities; namely, the natural resin plastics industry and the artificial resin plastics industry. Both these main groups can be further classified into the following seven varieties of industry.

The natural resin plastics industry:

1. The industry on the basis of rubber.
2. The industry on the basis of so-called natural resin such as rosin, shellac, copal, etc.

The artifiicial resin plastics industry:

3. The industry on the basis of nitrocellulose.
4. The industry on the basis of acetylcellulose.
5. The industry on the basis of urea formaldehyde resin.
6. The industry on the basis of phenol or cresol formaldehyde resin.
7. The industry on the basis of urea formaldehyde resin.

Each of these various plastic industries in Japan has reached an important position in recent years, and above all, the industry on the basis of phenol or cresol resin has so particularly developed that people are paying great attention to it.

Taking the further interest of this new industry into consideration, a plastics association was organized, as a section of the Osaka Industrial Research Association, at a meeting held in November 13th of last year by certain manufacturers who had reference to this industry, under the auspices of H. Takaoka, D.Sc., Director of the Osaka Municipal Institute of Industrial Research, and T. Shono, D.Sc., a chief chemist of the same institute and one of the most well known experts in plastics chemical technology in Japan. The plastics association thus formed was given the name "The Japanese Plastics Section of the Osaka Industrial Research Association".

The Industrial Research Association is an associate body of various manufacturers throughout Japan who engage in various industries and have direct or indirect connections with the Osaka Municipal Institute of Industrial Research. The latter is one of the largest research institutes in Japan for chemical technology and mechanical engineering, and its expenditure is included in the running expenses of Osaka Municipal City.

AS outlined by its Secretary, T. Yanagi, the basis of the Association is as follows:

Object:

To promote the healthy progress of the plastic industry by technical improvement and friendly relations between manufacturers. The administrators to consist of five directors, a secretary and some advisors.

Business:

1. *To issue an organ, the contents of which are as follows:*
   - (a) *The results of study in the Osaka Municipal Institute of Industrial Research.*
   - (b) *Introduction of the international aspect of the plastics industry by translations of selected passages from foreign plastic journals.*
   - (c) *Introduction of patents concerning plastics in Japan and foreign countries.*
   - (d) *Movements of the members.*
2. *To investigate the various matters relative to the plastics industry in response to the member's requests.*
3. *To hold a meeting as the association demands.*

Member Companies

The Japanese Plastics Section of O. I. R. A. has its office in the building of the Osaka Municipal Institute of Industrial Research and now has 30 members throughout Japan. Most of them are the first class makers in the field, or dealers in the various raw materials such as phenol, cresol, formaldehyde, casein, wood flour, etc. The names of the members follow:

Asahi Leather Co., Ltd. (Synthetic resin leather)
Dai Nippon Celluloid Co., Ltd. (Cellulose, casein, urea and phenol - formaldehyde plastics)
Edogawa Kogyo Sho. (Formaline)
Hisao Tanaka. (Plate, etc.)
Imai Denki Seisakusho. (Mikado Electrical lamp)

(*Continued on page 357*)

Calco Blacks

If you are looking for something exceptional and unusual in Condensation Blacks—Why not try one of our new types.

CALCO CONDENSATION BLACK 1500V
CALCO CONDENSATION BLACK 1630M

These two Blacks are new developments of our Research Department. Condensation Black 1500V has been designed especially for use in phenolic resin varnishes and has the advantage of being highly soluble under all conditions.

Condensation Black 1630M is designed for use in moulding powder only, producing a more powerful and brighter black.

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NEWS *of the* INDUSTRY

ON August 10th the New York Representatives of custom molders held their monthly luncheon at the Machinery Club.

There were twelve men present representing ten companies and also Mr. D. Buchanan, Mr. Vaill and Mr. Gordon Brown, Asst. Sales Manager of the Bakelite Corporation.

Mr. Brown displayed a chart showing the various properties of materials manufactured by the Bakelite Corporation. The high shock resisting qualities of particular materials were stressed. Mr. Brown also pointed out the possible difficulties that might arise through the general use of such terms as unbreakable, waterproof, non-absorbing, non-fading, as applied to plastic materials.

After some discussion it was decided that the proper approach to a molding job having specific requirements would be to learn how the molded part is expected to function and then recommend the material rather than have a prospect make a selection from the list.

The next luncheon will be held September 14th.

Government Reports

THE final report of the work of the National Committee on Wood Utilization, which conducted a Survey of Non-utilized Wood in New York State, has just been issued by the Director, Axel H. Oxholm. It contains some matter of interest to wood flour producers, and copies of it can be obtained from the Committee by writing them at the Department of Commerce.

The June and July charts of pyroxylin production, issued by the Bureau of the Census, show a continued decline. Shipments for those two months also reached new low levels.

According to the August 8th issue of Commerce Reports, Mexico has substantially increased the duty on imported phonograph records and disks for use with synchronized films.

Foreign Trade Opportunities

THE Department of Commerce announces that sheet insulating material is wanted by No. 629; advertising novelties by No. 583; phonograph records by No. 587; carbon black, best quality, by No. 454. Firms interested in supplying any of these should write to the Department in Washington.

Equipment Notes

THE Titusville Iron Works, Titusville, Pennsylvania, have issued a new illustrated catalogue describing boilers and other heavy equipment of interest to plastic manufacturers and fabricators.

The Arthur Colton Company, Detroit, Michigan, have just issued their new booklet giving complete data on preforming equipment of various types. It is in much better form than the previous catalogue put out by this company, and contains many detailed suggestions relative to handling and operating.

New Compact Chromium Plating Unit Designed Expressly For Machine Shops

PLASTIC forming dies, drills, taps, reamers, files, dies and punches, and many other tools and parts of machinery subject to wear which are made to last longer by chromium plating, may now be plated as a part of the regular routine of the machine shop tool room. United Chromium, Incorporated, of 51 East 42nd St., New York City has designed a compact chromium plating unit expressly for machine shops.

This new plating unit is so compact, and well-designed that it may be moved right into the tool room, and immediately connected to current, steam, water and waste outlets, and so simple that it can be successfully operated by most any workman in the shop. It is economical to use, and of sufficient size and versatility to plate the host of tools and parts on which chromium is so useful. It is the newest development resulting from the efforts made by United Chromium to give its licensees the benefit of its wide experience, and it has been designed to meet the operating conditions of machine shops—and to produce the best results under these conditions with lowest reasonable labor costs.

Bakelite Wins

THE Circuit Court of Appeals recently handed down an opinion upholding the decision of Federal Judge John M. Woolsey, who declined recently to grant an application by Frischer & Co. for an order restraining the Collector of Customs from excluding from this country foreign products which allegedly infringed on Bakelite products.

The decision is in line with a ruling of the Supreme Court, which held that the tariff act gives the Tariff Commission power to advise the President. The products in question were excluded from this country on the advice of the commission during the administration of President Coolidge.

According to the American Management Association, sponsers of the Third Packaging Exposition to be held March 7-10, 1933, the following concerns from the plastic industry have already reserved space for exhibits: The Celluloid Corporation, The Stokes & Smith Company and General Plastics, Inc.

New Pyralin Line

THE Du Pont Viscoloid Company has launched one of the most extensive promotion plans on toiletware sets in its history. It includes broadsides to 30,000 retail druggists throughout the country. It is believed that the large scope of

this campaign will do much to stimulate business in the toiletware field.

In addition, the company has just issued its 1932 catalog illustrating and describing its new Lucite and Pyralin patterns of boudoir accessories. Seven of the recent sets are reproduced in delicate pastel shades, which harmonize well with modern boudoir fittings.

Nema Meeting

THE annual NEMA meeting will be held at the Westchester Country Club, Rye, New York, beginning Monday, September 26, and continuing through Thursday. The Molded Insulation and Vulcanized Fibre Sections will meet at 9:30 on Monday, and the Laminated Section at the same hour on Tuesday. As provided in the By-Laws and Constitution, Section Chairmen and other officers will be elected at the time of these meetings.

The American Society of Testing Materials, as its recent annual meeting, approved the new Tentative Standards for Methods of Testing Laminated tubes used in electrical insulation (D350-32T).

New French Molding Material

A NEW plastic product with a basis of hydrogen and carbon has recently been announced in France. The material is claimed by the French press to possess a comparatively high mechanical and electrical resistance. Its heat resistivity is similar to that of ebonite and to chemical agents. The product is easily moldable and from it articles similar to those made from glass or porcelain can be manufactured, but far tougher and less fragile.

New Plasticizer Introduced

A NEW pale yellow viscous synthetic resin has just been placed on the market by the Hercules Powder Co., and is intended for use in the manufacture of clear lacquers for metals, woods, leather, rubber cements and other adhesives, non-drying inks, waterproofing compositions, etc.

This resin has been christened abalyn. It has a solvent action on nitrocellulose in the presence of alcohols, is not greatly affected by alkalies or weak acids, and does not hydrolize with boiling water. In addition, it has a solvent action on practically all natural and synthetic resins, rubber and drying oils, is non-corrosive, and does not liver with basic pigments. Abalyn may be used as a resin and plasticizer and will give a gloss, adhesion and body to nitrocellulose lacquers, which ordinarily do not contain any resins. The addition of this product causes no loss of flexibility in the lacquers.

PRESIDING at the inaugural meeting of the 51st session of the Junior Institution of Engineers of Great Britain, Colonel Sir Henry G. Lyons, the retiring President, presented the Institution's Gold Medal to Leonard Clegg for his paper on "Synthetic Resins," as being the best paper submitted by a member during the year.

TO foster the more widespread use of Trade Acceptance, an imposing group of manufacturers have come together to extend this payment plan to their customers and to increase its effectiveness by securing its adoption among other companies in the industries they represent. Among those who have adopted the plan are several important concerns that have a decided interest in the plastic field. They are: DuPont Viscoloid Company; Celluloid Corporation; General Electric Company; Roessler & Hasslacher Chemical Company; Monsanto Chemical Company. In addition, NEMA has reported that more than three quarters of the replies received to its circular letter sounding out members on the question were in favor of the increased use of Trade Acceptance.

Such short term paper, put to the proper use can increase reconstruction measures by supplying needed funds that might otherwise be spread over a long period of time.

Molders Meet at Niagara Falls

PARTIALLY due to summer vacations, only seven companies were represented at the July 15 meeting of the Molded Insulation Section of NEMA. Some ten companies had no representation, and a list of those present included: Prescott Huidekoper, American Insulator Corp; Douglas Woodruff and W. A. Freyer, Auburn Button Works; Donald Dew, Diemolding Corp.; H. D. Randall, General Electric Co.; B. E. Schlesinger, Northern Industrial Chemical Co.; J. B. Neal, Norton Laboratories; E. F. Bachner, John Agazini and H. D. Payne, Chicago Molded Products Corporation. In addition, Paul Hills of Allen and Hills, Inc., E. C. Aumend of NEMA, and R. C. Gilmore, Jr., of Plastics Publications, Inc., were also present.

The Chairman, Mr. Woodruff, called the meeting to order at the Hotel General Brock in Niagara Falls, and before proceeding with the adenda, reported that Frank Shaw, Shaw Insulator Company and Chairman of the Technical Committee, was seriously ill as a result of poisoning. (This was also reported in our August issue.—Ed.) The Section asked the Acting Secretary, Mr. Aumend, to communicate with Mr. Shaw, expressing its concern and hope for a speedy recovery.

After approval of the minutes of the previous meeting, the members were advised that G. C. Wilson, having severed his connection with Norton Laboratories, wished also to be relieved of his duties as Chairman of the Membership Committee.

(*Continued on page 356*)

TECHNICAL ABSTRACT SECTION

A Review of Literature and Patents

Synthetic Resins. William C. Arsem, of Schenectady, New York, Assignor to General Electric Company, a Corporation of New York. U. S. P. 1,860,164; May 24, 1932.

The process of preparing an infusible alkyd resin from the fusible product which consists in heating the latter with from 1 to 5% by weight of an organic sulphonic acid.

The process of preparing an infusible alkyd resin from the fusible product which consists in heating the latter with from 1 to 5% by weight of an organic amino sulphonic acid.

The process of accelerating the formation of an infusible alkyd resin from the fusible product which consists in heating the latter with about 2% by weight of an organic sulphonic acid.

The process of accelerating the formation of an infusible alkyd resin from the fusible product which consists in heating the latter with about 2% by weight of an organic amino sulphonic acid.

Process for the Manufacture of Mixed Esters of Cellulose and the Product Thereof. Charles S. Webber and Cyril J. Staud, of Rochester, New York, Assignors to Eastman Kodak Company, of Rochester, New York, a Corporation of New York. U. S. P. 1,861,200; May 31, 1932.

A process for the production of mixed esters of cellulose which comprises reacting upon an acyl ester of cellulose under the influence of heat with an organic acid having an ionization constant greater than that of the acid corresponding to the ester, said reaction being conducted in a solution containing the organic acid.

A process for the production of mixed esters of cellulose which comprises reacting upon hydrolyzed cellulose acetate under the influence of heat with an organic acid having an ionization constant greater than 1.82 x 10^{-5}, said reaction being conducted in a solution containing the organic acid.

A process for the production of mixed esters of cellulose which comprises reacting upon the acyl ester of cellulose under the influence of heat with an organic acid having an ionization constant greater than that of the acid corresponding to the ester, said reaction being conducted in a liquid bath comprising the organic acid.

Method of Manufacturing Silent Gears. Robert W. Lytle, of Cincinnati, Ohio, Assignor to the Formica Insulation Company, of Cincinnati, Ohio, A Corporation of Ohio. U. S. P. 1,861,125; May 31, 1932.

A process of making a silent gear which comprises: forming a skeleton comprising an annulus consisting of layers of fabric impregnated with a binder; forming a central spider consisting of layers of fabric impregnated with a binder, the spider being disposed within the annulus, with spaces intervening between the spider and annulus; introducing molding compound into said spaces; and molding the assembly under heat and pressure.

In the manufacture of a silent gear: forming a skeleton comprising an annulus and a spider comprising layers of fabric impregnated with a binder, said skeleton having spaces within the inner circle of said annulus; introducing molding compound into said spaces; and consolidating the assembly under heat and pressure.

Organic Acid-Polyhydric Alcohol Resins. Benjamin T. Brooks, of Greenwich, Conn., and Eugene J. Cardarelli, of Newark, N. J. U. S. P. 1,860,730; May 31, 1932.

A synthetic resin comprising the condensation product of △ 4 cyclohexene 1—2 dicarboxylic acid anhydride and a glycerine in which one of the hydroxyl hydrogens of said glycerine may be submitted by an aliphatic acid radical.

Process of forming a synthetic resin which comprises heating together △ 4 cyclohexene 1—2 dicarboxylic acid and a glycerine in which one of the hydroxyl hydrogens of said glycerine may be substituted by an alkyl radical.

Coated Article and Method of Preparing the Same. William Henry Moss, of Cumberland, Md., Assignor to Celanese Corporation of America, of New York, N. Y., a Corporation of Delaware. U. S. P. 1.860,687; May 31, 1932.

The method of coating a metallic screen comprising applying a coating composition containing a synthetic resin to the same in quantities insufficient to close the meshes thereof and then applying a coating composition containing cellulose acetate in quantities sufficient to close said meshes.

A flexible glass substitute comprising a metallic screen the meshes of which are coated with an acetone furfural resin and having a coating of a composition containing cellulose acetate sufficient to close the meshes.

A flexible glass substitute comprising a metallic screen the meshes of which are coated with a dyphenylol propane ketone resin and having a coating of a composition containing an organic derivative of cellulose sufficient to close the meshes.

Polmerization Products of Diolefines. Martin Luther, of Mannheim, and Claus Heuck, of Ludwigshafen-on-the-Rhine, Germany, Assignors to I. G. Farbenindustrie Aktiengesellschaft, of Frankfort-on-the-Main, Germany, a Corporation of Germany. U. S. P. 1,860,681; May 31, 1932.

In the production of plastic or elastic products from products obtained by the polymerization of diolefines in the presence of an oxidizing agent, the step of allowing to act on an emulsion of the said products up to about 5 per cent, by weight of the polymerization product, of sodium hydrosulphite solution.

Nonchalking Coating Composition. George R. Ensminger, of New Brunswick, N. J., Assignor to E. I. Du Pont de Nemours & Company, of Wilmington, Del., a Corporation of Delaware. U. S. P. 1,-860,532; May 31, 1932.

A coating composition of improved resistance to chalking containing a cellulose compound and a pigment comprising leaded zinc oxide.

A coating composition of improved resistance to chalking containing a cellulose ester and a pigment comprising leaded zinc oxide.

Means for Attaching Sheets of Celluloid and the Like to Mandrels. John N. Whitehouse, of New York, N. Y., Assignor to Sanite Corporation, of Burlington, N. J., a Corporation of New Jersey. U. S. P. 1,860,488; May 31, 1932.

Means for attaching sheets of celluloid and the like to mandrels, including a pair of relatively movable dies; a mandrel magazine; a reciprocatory plunger arranged to successively discharge single mandrels from said magazine into cooperative relation with said dies; actuating mechanism cooperatively connecting said dies and plunger; whereby they are operated in coordinate relation; and a rotary body connected with said actuating mechanism and adapted to apply a solvent of the sheet material to each mandrel in succession, as the mandrels are moved by said plunger means for carrying a mandrel to pressing position with respect to such a sheet; and means adapted to present such a sheet in cooperative relation with said mandrel.

Manufacture of Acetic Anhydride. Bernard Herstein, of Brooklyn, N. Y., Assignor to U. S. Industrial Alcohol Co., of New York, N. Y., a Corporation of West Virginia. U. S. P. 1,860,542; May 31, 1932.

A process for the preparation of the anhydride of a lower fatty acid from a salt of the corresponding acid, which comprises suspending said salt in liquid sulfur dioxid and causing sulfuryl chlorid or its components to react with the salt, thereby obtaining an organic residue which is filterable, separating the solution of the anhydride in liquid sulfur dioxid from the residue by filtration, and fractionating the solution to recover SO_2 and to obtain the anhydride as an end product.

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Fig. 1

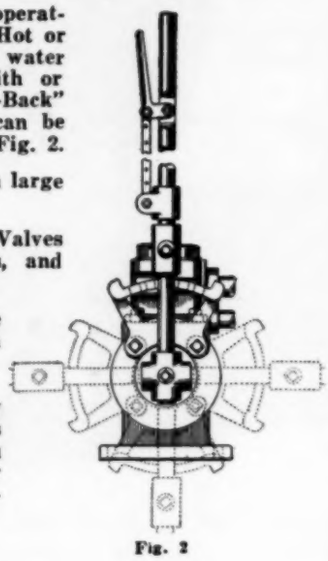

Fig. 2

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With expressed regret and a vote of commendation for Mr. Wilson's excellent work, the Section unanimously confirmed the Chairman's appointment of Donald Dew to fill the vacancy. After prolonged discussion of the National Electrical Code 6002g, following the reading of several communications, the Section adopted a resolution bearing on a suggested revision of the subject matter under this heading. Subsequent to this, it was explained that the Kurz-Kasch Company, as a result of their receivership, was no longer a member of the Section, and, although the company itself looked with favor upon continuing its participation, this could not be done under the present management.

Taking up the matter of traveling expense equalization, a point that has been under discussion in the past, it was decided to terminate the present method of handling this problem as of and including the meeting of April 15, 1932.

Speaking briefly on the NEMA Spring Meeting, Mr. Woodruff, who had attended this gathering, urged the members of the Section to read several plans and papers that were presented at that time. He stated that he found the meeting interesting and constructive, particularly with regard to the developments inaugerated in the Policies Division.

H. D. Randall, Chairman of the Trade Practices and Research Committee, suggested that the companies most interested in the tests of the Underwriters' Laboratories combine to underwrite the Section's share of the cost involved in this work, and after extended discussion, this was done. Mr. Randall also recommended a form of procedure in an attempt to organize an exhibit for the Century of Progress Exposition. It was decided that the Committee be allowed to continue its work in this direction, putting the final plan up to the members by letter ballot. The Membership Committee, of which

(*Concluded on page 360*)

Japanese Cooperating

(*Continued from page 350*)

Kobe denki Seisaku Sho. (Electrical implements)

Kobe Koshitsu Kigu Co., Ltd. (Dishes)

Koike Shoten. (Phenol, cresol, formalin)

Manazi Kagaku Kogyo Kenkyu Sho. (Urea formaldehyde resin dishes)

Miki Shoten, Ltd. (Plasticizers, urea, etc., and Japanese sole agent for "Pollopas")

Miyako Shikki Seisaku Sho. (Dishes)

Miyazaki Denkigu Seisaku Sho. (Electrical implements)

Nippon Bakelite Co., Ltd.

Nippon Kagaku Shikki Co., Ltd. (Dishes)

Nippon Paint Co., Ltd. (Synthetic resin paint and varnish; "Koken")

Nissho Raito Kogyo Co., Ltd. (Electrical implements, spinning accessories)

Nippon Resin Kogyo Co., Ltd. (Synthetic resin "Leuchtol")

Nippon Sakusan Seizo Co., Ltd. (Formalin, Ultrapin, acetylcellulose)

Okawa Shoten. (Powdered cellulose)

Okuda Toryo Co. (Synthetic resin; paint and varnish)

Otomune Co., Ltd. (Japanese sole agent for Durez)

Rigo Sha. (Instruments and equipment for plastics manufacture)

Rigunaito Kogyo Co., Ltd. (Spinning pots, silent gears)

Sagaraito Kogyo Co., Ltd., (Dishes, litre measures)

Satako Apparatus Manufacturing Co. (Instruments and equipment for plastic manufacture)

Sato Shokai. (Dishes)

Sugino Seisaku Sho. (Dishes, electrical implements)

Tokyo Denki Co., Ltd. (Electrical implements)

Toyo Denkigu Seisaku Sho. (Electrical implements and clock cases).

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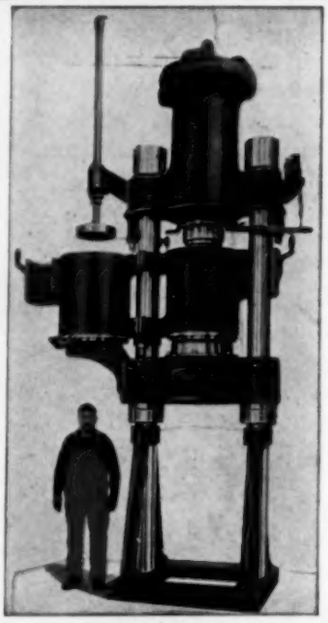

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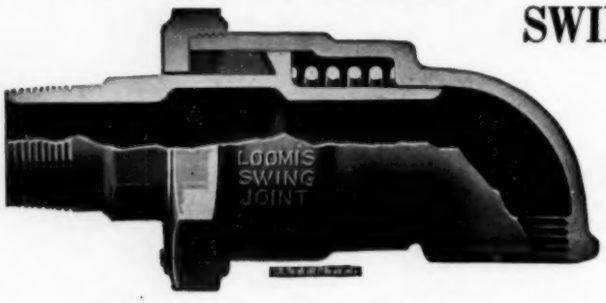

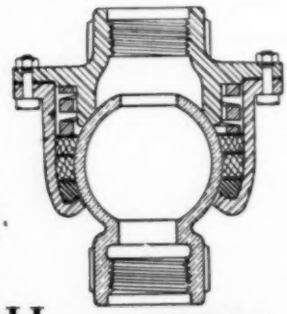

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(*Continued from page 348*)

plicated to others. Reluctantly I had to start manufacturing the raw materials in a sufficiently advanced stage so that the users had only to complete the operation of molding and polymerization. But even this required considerable teaching and supervision. Before long I realized that I was about to be caught in the same old treadmill in company with ever-increasing new technical and business problems.

Fortunately, I was still financially independent, and, contrary to most inventors, could forego the assistance of promoters or bankers or any one else to borrow money from. So I organized a manufacturing company on a modest scale, selecting most suitable business associates among some of my old experienced friends.

Modern Laboratory

In the meantime, my laboratory work was gradually extended until I had four assistants. This number kept growing fast, with the arrival of more and more new problems, until at present our research laboratories in Bloomfield occupy a set of buildings which have the appearance of a full-sized factory, with special offices and complete equipment, independent in operation and management from our manufacturing plants. All this has gradually brought about that it is no easy matter for any single person to follow the details of all the work going on and the increasing problems which vary from day to day.

It has been stated, and the statement seems correct, that of all the patents granted here and abroad, there is hardly one in a thousand which finds successful application. One of the evidences of a successful patent is infringement.

So I had to go through the experience of almost every successful inventor of defending my rights before the courts. Of all the irritating, time-robbing

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Nema Meeting

(*Continued from page 356*)

Mr. Woodruff is Chairman, made a detailed report of its activities which were of interest to all present, and Mr. Hills, the guest of the Section, addressed the members briefly.

A new plan of meeting, more in accord with present day activities, was adopted at the close of the session. The next Section Meeting will be held at the new NEMA Headquarters, 570. Lexington Avenue, New York City, on Friday, October 21, 1932.

After the meeting had adjourned, the members and guests were entertained by the General Plastics Corporation at the hotel, many of those present remaining over until the following day, Saturday, to enjoy the nearby golf courses and other recreation facilities.

Achievement or Oblivion?

(*Continued from page 346*)

dehyde in the presence of sodium sulphite to produce an initial product which is then mixed with hydroxy fatty acids, alcohols, cholesterol, glucose, levulose, cane sugar, mannose, maltose, mannitol or other CH_2OH or CHOH containing compounds. Product may be rendered infusible by heating with or without pressure and with or without fillers as mica, talc or clay.

British Patent 231,242, Dec. 29, 1923.

Phenol, urea or thiourea resinoid in the form of a powder or liquid is added to plaster or other liquid setting cement, mass is molded, allowed to set and finally heated to harden the resinoid. In order to avoid impairing the setting properties, the resinoid may be added, mixed or absorbed in kieselguhr or colloidal clay.

British Patent 247,620, Oct. 11, 1924.

Building slabs are made from a composition formed by mixing sawdust, cotton, paper or sand with a binder made by heating rosin with a catalyst as calcium hydroxide and formaldehyde. The product is heated to 120° until an infusible mass is formed capable of being softened by heat.

British Patent 251,964, May 8, 1925.

An artificial stone suitable for filtration is made by mixing a synthetic resin with fluorspar, coke, quartz, or other suitable aggregate, molding and heating to 100-120°. Porosity may be controlled by the adidtion of volatilizable substances as mineral oil, paraffin or "earth wax".

British Patent 251,965 dated May 8, 1925 describes a variation in which the synthetic resin is formed in situ in the aggregate.

British Patent 263,368 dated April 9, 1926 discloses making beams or columns from wire or bands of metal cemented together with a synthetic resin of phenol resinoid type.

British Patent 263,571 dated

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October 19, 1925 discloses adding glue, albumin, casein, glucoside a saponin containing substances, natural or artificial resins, resinates, resinic acids, cellulose derivatives, rubber, glycerol, phenols, formaldehyde or chloroform.

British Patent 275,448 dated October 26, 1926 discloses an artificial marble made by mixing calcined magnesia, solutions of zinc and magnesium sulphate, a phenolplastic, a small amount of sulphuric acid with or without a filler as barium sulphate.

British Patent 301,893 dated December 9, 1927 suggests adding a waterproofing substance as a solution of rubber, celluloid or synthetic resin to a stone-like composition made by treating ground vegetable ivory with a dilute acid or alkali solution, washing with water, drying, saturating with magnesium choride solution and adding magnesia. Coloring matter may also be added.

French Patent 635,399 suggests making constructional elements by cementing together plates of metal by means of a phenolic resin which may be rendered infusible in the cold by treatment with an acid or by heat treatment.

French Patent 641,778 discloses using Bakelite as a constructional material for building ships.

Writing Materials

Synthetic resins have also been suggested for writing materials as writing surfaces, inks, carbon paper, etc. Only a few of the patents will be discussed in the present article.

In British Patent 215,743 dated May 8, 1923 a writing surface that can be written on in ink, pencils, colors, etc. is said to be made of a phenol resinoid. According to the patentee the writing can very easily be erased.

In British Patent 157,416 dated January 10, 1921 it is suggested that writing paper be stiffened with a size comprising a condensation product of urea

or thiourea and formaldehyde in aqueous solution with borax.

In British Patent 307,435 dated March 7, 1928 a composition for making carbon paper comprises a solution in a volatile solvent of natural or artificial rubber, gutta percha, balata or their isomers, natural or artificial resins, esters or mixtures thereof together with a suitable pigment lake and softening agents, vulcanizing agents, accelerators, etc.

Unshatterable Glass

A use of the resinoids that will probably become a great factor in the automobile industry in the near future is unshatterable glass. The following patents disclose some of the many suggestions that have been made along this line:—

British Patent 254,668, Jan. 26, 1925.

Glass and cellulose esters are cemented together by the use of itaconic acid which has been heated to make it viscous. The cement is finally polymerized and hardened by further heating.

British Patent 286,250, March 1, 1927.

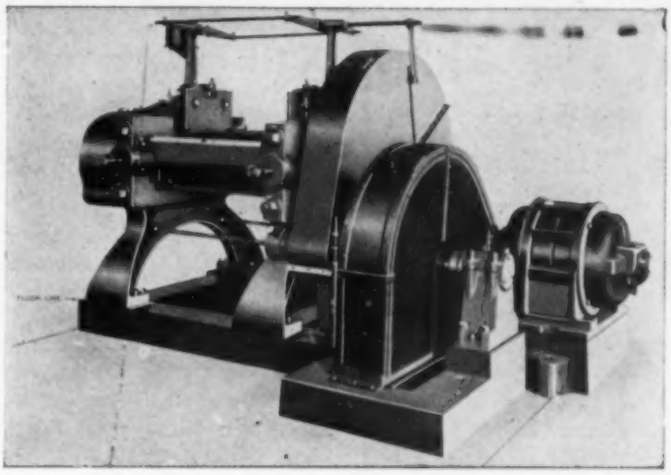
Sheets of urea formaldehyde condensation product are united by heat and pressure to form windshields for automobiles and flying machines.

British Patent 303,332, June 25, 1928.

Sheets of glass are united by means of an interposed celluloid sheet. The inner faces of the glass sheets are treated first with a thin coating of casein, dried and then treated with a solution of celluloid in amyl acetate to which phenol is added. Ethyl alcohol and propyl alcohol may also be used to facilitate the union of the sheets which is accomplished under pressure.

British Patent 306,439, Nov. 18, 1927.

A binder suitable for making splinterless glass is made as follows:— Gelatin or glue is treated with 30 to 50% of its weight of a saponified fatty material, such as linseed or castor oil or a saponified, sulphonated, fatty material in order to im-



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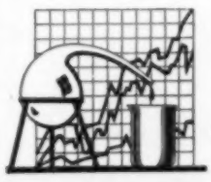

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prove its flexibility, strength and transparency. Hardening agents as well as phenol (one to 2%) or sodium or potassium iodide may be added.

British Patent 307,462, Mar. 8, 1928.

Openwork or reticulated material such as wire netting is enclosed in a coating of a synthetic resin and cellulose acetate or other organic derivative of cellulose.

British Patent 313,269, May 2, 1928.

Condensation products of amino derivatives such as urea or thiourea and formaldehyde in liquid form with or without accelerating catalysts are used to laminate glass sheets. It is stated that the liquid known as "schellanstreichlack" "K" made as described in German Patent 448,201 may be used.

British Patent 314,379, June 26, 1928.

Glass sheets are united with cellulose films by means of polyvinylacetate dissolved in alcohol or ethyl acetate.

French Patent 586,303, Nov. 27, 1923.

Films or plates of gelatin, cellophane or celluloid are dipped into a fluid phenol resinoid or one dissolved in acetic ester or alcohol, dried and redipped to form automobile windshields or railroad car windows. The phenolplastic may be made by treating phenol with an excess of formaldehyde in presence of basic catalysts as ammonia, caustic soda or sodium salicylate.

French Patent 649,602, Feb. 23, 1928.

A shatterproof glass is made by uniting sheets of urea formaldehyde resinoid composition or analogous material. The laminated sheet may consist of a central sheet of a softer material and outer sheets of a harder composition.

French Patent 658,563, Aug. 3, 1928.

Two sheets of glass and an interposed plastic sheet of cellulose acetate etc., are plunged into a bath composed of plastifying agents for the plastic

sheet and then pressed together. In French Patent 658,564 dated August 3, 1928 the glass and the plastic sheets are united by an intervening film composed of polymerized vinyl acetate and plasticity agents for the cellulose ester.

French Patent 666,366, Dec. 26, 1928.

A glass substitute is described consisting of polymerized acrylic acid or polymerized derivatives thereof with or without other suitable ingredients.

German Patent 484,146, Jan. 26, 1926.

Sheets of glass and of a cellulose ester as cellulose acetate are united as in British Patent 254,668 by means of a polymerized diakyl ester of itaconic acid.

The Textile and Artificial Silk Industries

Artificial threads or silks made of compositions containing resinoids are disclosed in the following patents:

British Patent 181,014, May 30, 1922.

A urea or thiourea resinoid has incorporated therewith before hardening fillers and hardening modifiers as salts. Weak acid salts as alkali or alkaline earth salts of carboxylic or weak inorganic acids serve as retarders and strong acid salts as sulphates, chlorates, chlorides, and nitrates and including ammonium salts such as ammonium thiocyanate may be used as accelerators. The effect of the retarder may be nullified by means of heat or an accelerator.

British Patent 278,684, Oct. 5, 1926.

Regenerated celluloses are treated with phenol-sulphur or phenol - sulphur - formaldehyde soluble resins or their reagents to reduce their swelling tendency.

British Patent 312,041, May 19, 1928.

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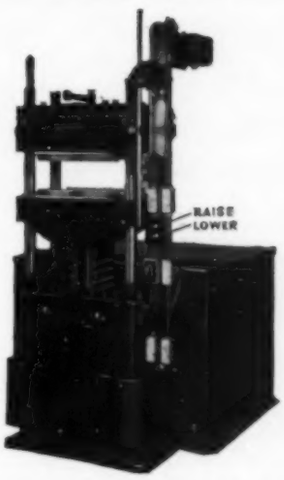

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Advertisers' Index

Advance Solvents Corp. 355
American-British Chemical Supplies, Inc. 356
American Insulator Corp. 362
American Record Corp. 359
American Plastics Corp. 342
Auburn Button Works, Inc. 368
Bakelite Corp. 337
Baker-Perkins Co. 355
Becker-Moore Co. 369
Boonton Molding Co. 368
Burnet Co., The 369
Calco Chemical Co. 351
Cavagnaro, John J. 358
Chicago Molded Products Corp. 367
Claremont Waste Mfg. Co. 369
Compo-Site, Inc. 368
Consolidated Products Corp. 367
Doerfler, L., Mfg. Co. 368
Dunning & Boschert Press Co. 356
Economy Ticket & Label Co. 369
Esselen, Dr. G. J. 363
General Dyestuff Corp. 372
General Electric Co. 340
Heyden Chemical Co. 360
Imperial Molded Products Corp. 368
Insulation Mfg. Co. 360
Jungmann & Co. 368
Kuhn & Jacob Molding & Tool Co. 358
Loomis Co., Evarts G. 358
Luxite, Inc. 368
Marblette Corp. 357
Mechanical Die & Tool Co. 355
Monsanto Chem. Works 359
Molded Insulation Section, NEMA 338
Newark Die Co. 365
Plastic Molding Co. 368
Recto Mfg. Co. 358
Resinox Corp. 362
Reynolds Spring Co. 368
Shaw Insulator Co. 361
Sherka Chemical Co., Inc. 364
Siebert, R. R. 365
State Chemical Co. 369
Standard Mirror Co. 369
State Chemical Co. 369
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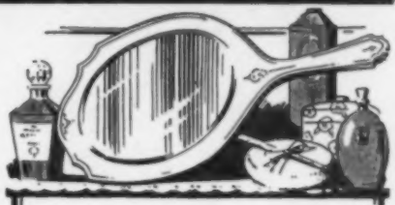

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And Now, In Closing:

OUR News Item last month on the New NEMA address was garbled by that imp, the printer's devil . . . it should have been 570 Lexington Avenue . . . they moved there on August 27th . . . From England comes news that H. E. Ashdown, well known in plastic circles, passed away last July . . . Pratt E. Tracy, head of the Air-Way Electric Appliance Corporation, Toledo, died suddenly early last month . . . The NEMA (we're back where we started) Cost expert, T. W. Howard, will deliver a paper September 15 at the Atlantic City meeting of the American Trade Association Executives . . . And speaking of accountants—as who isn't these days?—friend John J. Quigley has been appointed Instructor in Economics at the Washington Square College of New York University . . *New Products* . . . the Valvo Company has introduced their new capless Snow Top tooth paste; it hasn't baffled the molders, however . . . Bryant Electric is responsible for those swell cocktail trays now in Woolworth's . . . this chain has just been reported as issuing a contract for $500,000 worth of compacts, lipsticks and other toilet accessories . . . about one-quarter of it is plastic business . . . The Markilo Company, Chicago, has developed a line of visible indexes . . . using trick forms of acetate sheeting . . . *Legal Bouts* . . . Louise Squire, actress, won her first round against Woolworth when she was recently awarded $25,000 damages for injuries caused by an explosive comb . . . *Personnel Items* . . . Charles F. Reeves, connected with the industry for almost thirty years, has joined the Fiberloid Corporation as Sales Promotion Manager, moving to Indian Orchard, Mass. . . . his many friends will recall that he was previously Vice President of the Celluloid Corporation . . . With the dissolution of Molded Plastics, as reported in our last issue, G. D. Snyder has gone with the Molding Corporation of America . . . he will work through the New York office, 370 Seventh Avenue . . . The New England representative for Marblette, Frederick H. Greene of New Haven, was formerly with Catalin . . . F. E. Kopecky has left the research division of Bakelite to go with Mr. Carleton Ellis of Montclair, New Jersey . . . Since leaving Norton Laboratories, G. C. Wilson has been very ill . . . and Frank Shaw is much better, thank you . . . In spite of our recent, since corrected, error regarding changes at Arthur D. Little we persist, this month, in announcing that . . . Bradford S. Covell has left the Little Organization. He is now Chief Chemist of the Patent Button Company, Waterbury . . . and this time, believe it or not, we are right . . .

THE B. F. Goodrich Rubber Company takes a slap at synthetic materials generally, and plastics by implication, in a recent booklet on hard rubber sheets, tubes and rods. The opening paragraph says: "During recent years many 'substitutes for hard rubber' have appeared. So far there has been none in which are combined the many desirable properties of hard rubber itself." Taking this literally, the reader must admit the truth of this statement, for the inherent properties of rubber are as hard to duplicate as the inherent characteristics of any material—plastics for instance. If a competing material can supply some of the properties of the original and add a few more that the other can never have, it ought to have a distinct field of usefulness.

We object not so much to the expression as to the implication that everything must be a substitute. There are products that step out ahead, acting as substitutes only incidentally. Synthetic plastics, to-day, should be put in that classification.

ONLY a few years ago, prophets were confounded by the drastic extent of the depression. At present, therefore, the profession of "looking-for-corner-turning" has few practioners; few, that is, in comparison with the many it had previously. Thus even an Editor is loath to make a prediction of any kind. Stocks and bonds may be on the rise, commodities may react favorably and certain business may be extremely active; but if price-cutting continues, restricting (if not totally eliminating) profits; if business is so uneven that one plant works five days and a competitor, one; if unemployment decreases but recent "resignations" continue in greater number;—what, then, should be the Editor's job?

A word of caution, perhaps, that prosperity should not outrun its basis; that no order, no matter how large, is a good one unless it shows a profit. Editors generally are apt to be more conservative than the business man, balancing, as they do, the see-saw of business. Nevertheless, the writer doesn't want to be too ultra ultra.

Consequently, when he reflects that business does seem better and that certain attributes (!) of the depression are being removed, the reader will know that the reflection, tinged with conservatism, is less pleasant than optimism, but, like the painless dentist, better for the patient than pessimism.

And the patient, if he survives the cure, should be a healthy specimen!